

Application Number: 10/560,293  
Amendment Dated: December 26, 2007  
Reply to Office Action Dated: June 26, 2007

### **REMARKS**

This Reply is responsive to the Office Action dated June 26, 2007 for which a three (3) month period of response was given. A Petition and fee for a three (3) month extension of time are enclosed herewith. The Commissioner is hereby authorized to charge any necessary fees to Deposit Account No. 50-0959, Attorney Docket No. 089498.0483.

Claims 1 through 18 are pending in the present application. Claims 7, 11, 17 and 18 have been amended into independent format. Support for the amendments to claims 7, 11, 17 and 18 can be found in the specification as filed. In view of the above amended claims set, entry and consideration of the amended claim set and the remarks which follow is respectfully requested.

Additionally, the specification has been amended to correct an inadvertent typographical error in Equation 13 (see page 18 of the specification as filed). Support for the amendment to Equation (13) can be found in the various other Equations contained in the specification as filed. As such, no new matter has been added. Accordingly, entry of the amendment to Equation (13) of the specification is believed due and is respectfully requested.

Initially, the Applicant would like to thank the Examiner for acknowledging the allowable subject matter of claims 7, 11, 17 and 18. Claims 7, 11, 17 and 18 have been amended into independent form in light of the Examiner's acknowledgement of the allowable subject matter of these claims.

#### **I. Double Patenting Rejection:**

Claims 1, 4 through 6, 8, 9 and 11 have been rejected under the judicially created doctrine of obviousness-type double patenting over co-pending United States Patent Application No. 11/129,769.

With regard to this obviousness-type double patenting rejection, a Terminal Disclaimer executed by Joseph J. Crimaldi (Attorney-of-Record) is enclosed herewith. The Commission is hereby authorized to charge the necessary Terminal Disclaimer fees under 37 C.F.R. § 1.20(d) to Deposit Account No. 50-0959, Attorney Docket No.

Application Number: 10/560,293  
Amendment Dated: December 26, 2007  
Reply to Office Action Dated: June 26, 2007

089498.0483.

In light of the enclosed Terminal Disclaimer, it is believed that the obviousness-type double patenting rejections of claims 1, 4 through 6, 8, 9 and 11 over co-pending United States Patent Application No. 11/129,769 has been rendered moot. As such, withdrawal of the obviousness-type double patenting rejection is believed due and is respectfully requested.

II. Objection to the Drawings:

The Examiner has objected to Figure 4 as being illegible. In light of this objection, new Figures are being submitted for all the originally filed Figures. No new matter has been added to the enclosed new Figures. Additionally, the Figures have been labeled as Replacement Sheets and numbered accordingly.

In light of the attached new formal drawings, the objection to Figure 4 is believed to have been rendered moot, and withdrawal thereof is respectfully requested.

III. Objection to the Abstract:

The Examiner has pointed out that the length of the original Abstract was too long. Accordingly, a new Abstract has been submitted that is currently between 50 and 150 words in length.

Accordingly, in view of the attached revised Abstract, the objection to the Abstract is believed to have been rendered moot, and withdrawal thereof is respectfully requested.

IV. The 35 U.S.C. § 103(a) Art Rejections:

Claims 1 through 6, 8 through 10, 12 through 14 and 16 have been rejected under 35 U.S.C. § 103(a) over Wang et al. (United States Patent No. 7,061,614) in view of Garcia et al. (United States Patent No. 6,927,888), and further in view of Brophy et al. (United States Patent No. 5,129,724).

Application Number: 10/560,293  
Amendment Dated: December 26, 2007  
Reply to Office Action Dated: June 26, 2007

Turning to Wang et al., this patent discloses a broadband optical metrology system that optimizes performance by dividing the broadband illumination into multiple sub-bands, such that each sub-band spans only a fraction of the frequency width of the original broadband spectrum.

As is disclosed therein, the system of Wang et al. includes two different light sources that emit "substantially different" light spectrums (see column 3, line 61 to column 4, line 18 of Wang et al.). The two different light source arrangement of Wang et al. is further substantiated by the disclosure contained at column 5, lines 41 through 49. Furthermore, Wang et al. discloses the use of two polarization state-generators, one for each of independent light source 12 and 14 (see Figure 6, elements 16 and 18), two polarization-state receivers (see Figure 6, elements 34 and 36 and two optical image-capture devices (see Figure 6, elements 70 and 72).

Given the above, and in view of the totality of the disclosure contained therein, Wang et al. requires the use of at least two separate light source paths. That is, Wang et al. requires the use of two different light sources each having their own respective polarization state-generator, polarization-state receiver, and optical image-capture device to function as intended.

Turning to Garcia et al., Garcia et al. discloses a method and apparatus for improving the signal to noise ratio, the contrast and the resolution in images recorded using an optical imaging system which produces a spatially resolved image. The method of Garcia et al. is based on the incorporation of a polarimeter into the setup and polarization calculations to produce better images.

Turning to Brophy et al., Brophy et al. discloses a method for measuring simultaneously the relative height variation and the thickness of a film. In order to do so, Brophy et al. discloses that a first interference pattern is produced for a calibration surface at a first wavelength and detected. Intensities of the first interference pattern are then measured and used to compute a first group of phase values for each pixel. Next, a second interference pattern for the calibration surface is produced at a second wavelength and detected. Intensities of the second interference pattern are measured and used to

Application Number: 10/560,293  
Amendment Dated: December 26, 2007  
Reply to Office Action Dated: June 26, 2007

compute a second group of phase values for each pixel. Finally, a value for the surface height change  $\Delta h$  (delta-h) is computed by obtaining a linear combination of the corresponding phase values of the data groups.

Although the Examiner correctly points out that Wang et al. fails to teach a polarization-state generator designed to receive and transmit first and second quantities of light prior to such light entering a waveplate, the Examiner contends that Garcia et al. makes up for the deficiencies of Wang et al. The Examiner also correctly points out that Wang et al. fails to teach a processing unit that assigns a weighing factor to at least one of a first and second image generated by a multi-energy polarization imaging system. However, the Examiner contend that Brophy et al. discloses such a feature and therefore cures the deficiencies of Wang et al. Applicant respectfully disagrees.

Initially, with regard to Wang et al., the application of the system of Wang et al. to the present invention would require substantial modification of the intended invention of Wang et al. and would, as such, render the disclosed invention inoperable for its stated purpose.

Additionally, with respect to the Examiner's rejection of claims 1 through 6, 8 through 10, 12 through 14 and 16 based on the combination of Wang et al., Garcia et al., and Brophy et al., it appears that the Examiner is attempting to pick and choose certain elements of each reference and combining them to yield the presently claimed invention. It is well settled that such "classic" picking and choosing involves the impermissible use of hindsight in an attempt to reconstruct the claimed invention.

More specifically, the Examiner merely identifies certain claimed elements in the cited art and then alleges that the elements can be combined. The Federal Circuit ruled in In re Dembiczak, 50 USPQ.2d 1614 (Fed. Cir. 1999) that "combining prior art references without evidence of such a suggestion, teaching, or motivation simply takes the inventor's disclosure as a blueprint for piecing together the prior art to defeat patentability [which is] the essence of hindsight". The Federal Circuit continued on to state:

Application Number: 10/560,293  
Amendment Dated: December 26, 2007  
Reply to Office Action Dated: June 26, 2007

. . . that the best defense against the subtle but powerful attraction of a hindsight-based obviousness analysis is rigorous application of the requirement for a showing of the teaching or motivation to combine prior art references. . . . [and that such a] showing must be clear and particular.

As is well settled, conclusory statements regarding motivation to combine prior art references are insufficient to establish a prima facie case of obviousness. The Examiner "must identify specifically . . . the reasons one of ordinary skill in the art would have been motivated to select the references and combine them." In re Rouffet, 47 USPQ.2d 1453, 1459 (Fed. Cir. 1998). The Examiner must point to "actual evidence." "That is, the showing must be clear and particular. Broad conclusory statements regarding the teaching of multiple references, standing alone, are not 'evidence.'" In re Dembiczak, 50 USPQ.2d 1614, 1617 (Fed. Cir. 1999). The Examiner must make "particular findings . . . as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed." In re Kotzab, 55 USPQ.2d 1313, 1317 (Fed. Cir. 2000).

Additionally, the Federal Circuit stated that the requirement for actual evidence is not diminished by the knowledge that the Examiner attributes to one of ordinary skill in the art. Since such motivation and, more importantly, actual evidence is clearly lacking in the cited art, the Examiner cannot use the Applicants' own disclosure as the basis to combine various claimed elements.

In particular, all of Wang et al., Garcia et al., and Brophy et al. fail to disclose or suggest both the system of claim 1 and the method of claim 13. This is because none of the cited art individually discloses, teaches or suggest the combination of elements specified in pending claims 1 and 13.

Furthermore, as is noted above, Wang et al. teaches away from a system that utilizes a "multi-wavelength" light source that is capable of illuminating a target with a first and a second quantity of light, where each quantity of light have a different wavelength. Given this, one of ordinary skill in the art would not have been motivated to modify the system of Wang et al. in the manner alleged by the Examiner. As such, Wang et al. clearly

Application Number: 10/560,293  
Amendment Dated: December 26, 2007  
Reply to Office Action Dated: June 26, 2007

teaches away from the present invention as is recited in pending claims 1 and 13.

Given the above, claims 1 through 6, 8 through 10, 12 through 14 and 16 are patentable over the combination of Wang et al., Garcia et al., and Brophy et al. As such, reconsideration and withdrawal of the obviousness rejection of claims 1 through 6, 8 through 10, 12 through 14 and 16 is respectfully requested.

Claim 15 has been rejected under 35 U.S.C. § 103(a) over Wang et al. (United States Patent No. 7,061,614) in view of Garcia et al. (United States Patent No. 6,927,888) in view of Brophy et al. (United States Patent No. 5,129,724), and further in view of Furtak (United States Patent No. 6,384,916).

The teachings and shortcomings of Wang et al., Garcia et al., and Brophy et al. are discussed above in detail. Regarding Furtak specifically, Furtak discloses a parallel detecting spectroscopic ellipsometer/polarimeter sensor that has no moving parts and operates in real-time for *in-situ* monitoring of the thin film surface properties of a sample within a processing chamber. As disclosed therein, the device of Furtak includes a multi-spectral source of radiation for producing a collimated beam of radiation directed towards the surface of the sample through a polarizer. Given the disclosure contained therein, the Examiner contends that Furtak cures the deficiencies of Wang et al., Garcia et al., and Brophy et al. as they relate to the subject matter of claim 15. Applicant however disagrees.

As is noted above, the combination of Wang et al., Garcia et al., and Brophy et al. is clearly based on hindsight and as such the addition of Furtak only further emphasizes that the improper use of hindsight has occurred. For at least this reason, the obviousness rejection of claim 15 is believed to be unfounded and withdrawal thereof is believed due and is respectfully requested.

V. Conclusion:

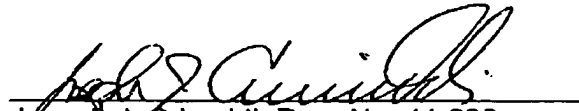
Accordingly, reconsideration and withdrawal of the obviousness-type double patenting rejection, the objection to the drawings, the objection to the Abstract and the obviousness rejections of 1 through 6, 8 through 10, and 12 through 16 is respectfully requested.

Application Number: 10/560,293  
Amendment Dated: December 26, 2007  
Reply to Office Action Dated: June 26, 2007

For at least the foregoing reasons, the present application is believed to be in condition for allowance, and a Notice of Allowance is respectfully requested.

Should the Examiner wish to discuss any of the foregoing in more detail, the undersigned attorney would welcome a telephone call.

Respectfully submitted,

  
\_\_\_\_\_  
Joseph J. Crimaldi, Reg. No. 41,690  
Roetzel & Andress  
222 S. Main St.  
Akron, Ohio 44308  
(330) 376-2700

December 26, 2007

1492942.089498.0483